Advances in Genome Editing and Engineering

Instructor Name: Dr. Xue (Sherry) Gao

Wednesday and Friday 2:00-3:15 pm

ChBE558/BIOE526

Contact Information

Instructor: Dr. Xue (Sherry) Gao
Office: BRC 315

Email: xue.gao@rice.edu
Office Hours: Friday 10:40 am to 11:40 am

Course Objectives and Learning Outcomes

This course aims to provide a comprehensive understanding of advances in the nuclease-mediated genome engineering field. Lectures and presentation/discussion sections will cover the past and current stages of genome-editing technologies, the fundamental mechanisms of different classes of genome-editing nucleases, and cutting-edge strategies for engineering novel genome-editing agents and their applications in synthetic biology and therapeutics. The course will have one lecture and one project presentation section each week. Students will present and discuss literature relevant to the subject of each week's lectures. Due to the rapid development of the genome engineering field, literature for the discussion sections will be selected to reflect the most recent advances.

Required Texts and Materials

No textbook is required. This course will be based on the most recent literature which will be assigned. Basic knowledge on molecular biology, chemical biology, protein structure, and protein engineering, *etc.*, is a prerequisite.

Exams and Papers

Final-term Paper

Grade Policies

Letter Graded;

50% Presentation and Discussion in Friday's Discussion Sections;

10% Attendance and Participation;

40% Final Term Paper.

Absence Policies

Students are required to attend all the lectures on Wednesdays and all the literature presentation/discussion sessions on Fridays and arrive in a timely manner. Students who are absent without prior notification to the instructor may not receive points for the corresponding section.

Rice Honor Code

In this course, all students will be held to the standards of the Rice Honor Code, a code that you pledged to honor when you matriculated at this institution. If you are unfamiliar with the details of this code and how it is administered, you should consult the Honor System Handbook at http://honor.rice.edu/honor-system-handbook/. This handbook outlines the University's expectations for the integrity of your academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process.

Disability Support Services

If you have a documented disability or other condition that may affect academic performance you should: 1) make sure this documentation is on file with Disability Support Services (Allen Center, Room 111 / adarice@rice.edu / x5841) to determine the accommodations you need; and 2) talk with me to discuss your accommodation needs.

Syllabus Change Policy

This syllabus is only a guide for the course and is subject to change with advanced notice.